

Dr. Malcolm Sparrow

Good Morning. I'm happy to be with you. Very pleased to be invited. A little alarmed to take this particular spot. Always happy to be in the room when ECOS and EPA are in the same room. Because you never know what's going to happen next. Maybe we should be reassured I guess that we do that under the watchful eye of the Council for Excellence in government, which in my experience, has been a mature, sensible organization.

And I'm hoping that we can dim the lights a little because it's important that you see what's up there. My wife tells me sometimes that I sound better than I look. And so this way you get the best of both worlds - you get to watch there and listen to me.

What I hope to do this morning is prepare you for two days of delight. You're going to go from session to session, experiencing a veritable smorgasbord of innovative delights and you're going to sample them and hear about some you knew and you're going to present some of your own.

And we have in this room champions of various innovations. And what I hope to do in the next 45 minutes or so is put in the back of your brain, some kind of interpretive framework so you'll be able to figure out just what these innovations are and where they fit. And what is the challenge for the next five years moving forward as regulatory policy and strategy unfolds.

Now not to beat about the bush. I'm going to take the liberty of interpreting innovation as merely one path, and others are walking other paths. I do believe that a lot of different regulatory agencies are slowly gravitating toward a new strategic orientation. And I want you to understand how the experience of discovering innovations and exercising them fits into this broader scheme, but I thought I'd show you the end of the story so at least you'd understand where I'm headed.

What do I mean by risk control? That's unfamiliar language in your business. But these are designed to be generic terms that mean harm control or risk control. The business of regulatory agencies is usually to identify bad things and then suppress them. In your case, environmental harms or risks or exposures, or problems. And what we do see is by a variety of different roots a broad range of regulatory and enforcement professions seem to be gravitating back toward central acknowledgment of risk control or problem solving obligations.

Risk Control Models

Old Model	New Model
- Enforcement	- Compliance Assistance and Customer Service
- Reactive	- Preventive
- Adversarial	- Partnership
- Hard	- Soft
- Incident response	- problem solving

How did they get there? The path that some follow - and this to a degree may have affected some of you, particularly in the first half of the 1990s - is simple political pressure for regulatory reform. The sense that regulation had become unreasonable, bureaucratic, and nit-picky. In the American case, much more adversarial than their European counterparts. Particularly, from 1995 onward, there was political pressure to be more reasonable, conciliatory, to exploit partnerships, to be less adversarial. But of course, as a regulator, when you're pushed that way, the danger is that you get too close to the regulated community. You run the risk of capture - what some of my colleagues have come to call "from a position of principle distance you flirt with unprincipled intimacy."

Another root, the one we're going to dwell on this morning, is the innovation root, by which many of you come at least in part. And what happens here to regulatory executives is that some staff member - analytically-minded, energetic, intelligent, well-motivated - who'd had enough coffee that morning, saw a problem and designed a new fix. And of course they did it by themselves or in a small team, usually without any formal support within the agency. But because of the political environment and because whatever it was they invented actually worked like a dream, it came to the attention of the executives and was even applauded by politicians. And before you know it, these low-level staff members in your organization were standing on platforms with presidents and vice presidents, even winning Ford Foundation awards. That was the pleasant piece of the experience. But that raised for executives some rather troubling questions. First of all, and especially when you're given \$100,000 in support of this, what does replication and diffusion mean?

And that's a question you'll all be asking yourselves about the innovations that you have described to you over the next two days. Could we just take this and supplant it into our organization?. When you try - at your peril - you'll normally be greeted with some rather predictable responses. Folks say "Oh that wouldn't work here." They say that in part, in truth, because circumstances are different, and that in fact wouldn't work here. And they say that in part because it wasn't invented here. And the tendency of any bureaucracy to take a brilliant new

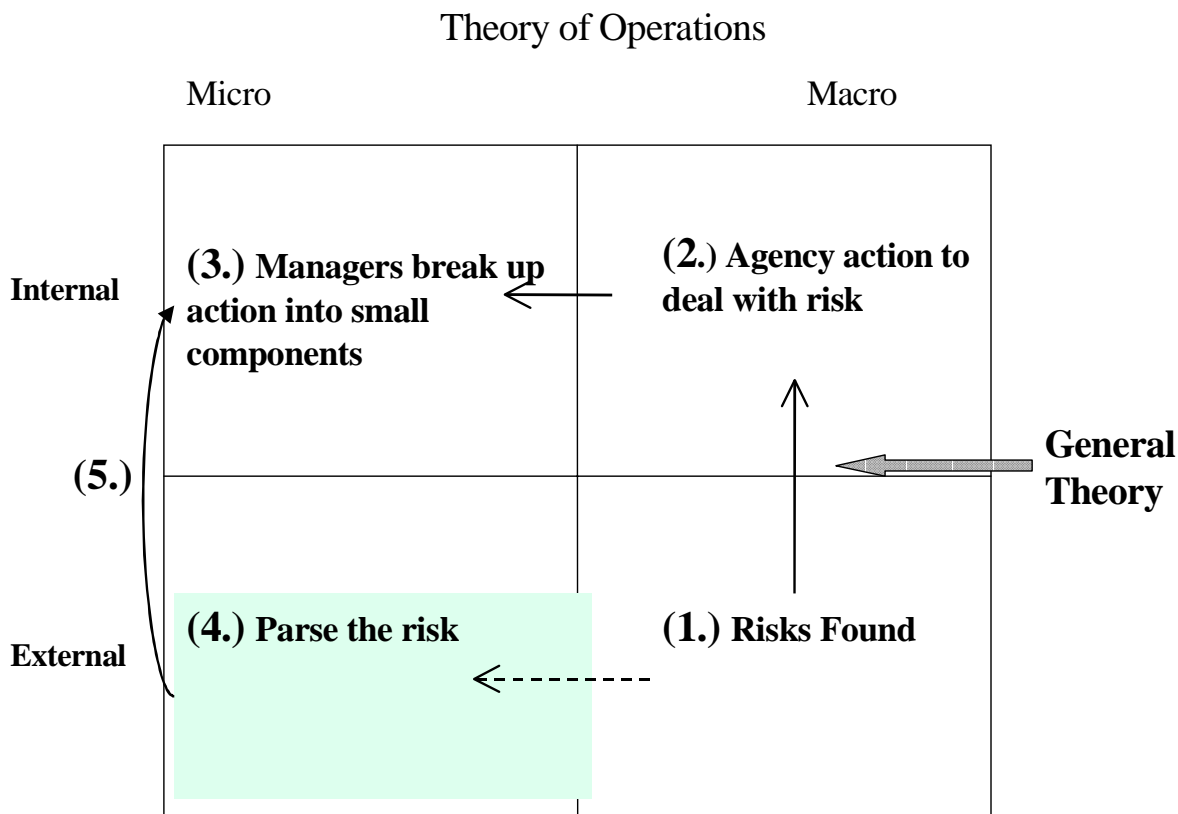
idea and to turn it into another blanket bureaucratic prescription for everybody to follow, in fact, devalues the contributions that staff could make elsewhere. And so the issues of replication and diffusion turn out to be thornier and more troublesome than we might have imagined.

But the deeper question is what it would mean to institutionalize such innovation as a pattern of practice. And when we look back in retrospect it often was a result of particularly energetic and well-motivated staff members. That's why we see this thing. That means that we see those that happen to spring forth, that there is a bottom up nature to this innovative process. (I haven't been able to figure it out, but in the south of the United States, they call this bottoms up, and I have not been able to account for the semantic difference). But the idea that it's bubbling up from the ranks and is, therefore, serendipitous, you know easily could not have happened. It's s miscellaneous. It just depends who happened to be thinking about what. There is no construct, there is no system, there is no structure, and if the executive confronts the institutional question - I mean remember what Al Gore says about this when he celebrates innovations. He says "These are good people locked in bad systems," - you're responsible for the system, perfecting the system. And institutionalization would mean not that we sat passively at the tops of these organizations waiting to see what bubbled to the surface, but that we would actually require innovation. And not just any innovation, but we would require innovations constructed carefully around strategic goals. We would manage the process of innovation and that's a whole different level of innovativeness in an organization. As we move through this, we're going to pay some attention to the challenge of institutionalization and what that in fact would mean.

The two other roots by which agencies are gravitating to the central place, I won't say much about them today -there's plenty of other places you can go and read about it if you want - limits of process management and customer service as prescriptions for reform. I have to always be careful how I say this. Lots of federal agencies, lots of state agencies have discovered that as regulators your business is essentially surrounded by conflict. It is unusual in the regulatory context to be able to get unanimous consensus about the right thing to do. There's a reason for that. If everybody were to be made happy by the same course of action, this would usually not be a regulatory issue. The very purpose of regulation is that you require individuals and corporations to act in ways other than they would prefer in their own short-term selfish economic interests, for the public good, the broader good. And that therefore you're putting public aspirations ahead of private aspirations. And hence the conflict and hence the fact that the people that you deal with on a daily basis as you go about your business are not those that you expect to be pleased. That the customer service motto, which is "identify your customers and delight them so they come back for more," you apply this to environmental polluters as the police apply it to drunk drivers or that customs applies it to drug smugglers. I mean the idea that you're going to please these people is not only inadequate as a prescription for regulatory conduct, it can be dangerously misleading if taken too far. And at the same time and in preferably the same breath, we have to say "of course, much good has been done by learning to treat people reasonably." And that process improvement has worked magic in core operational processes and should continue to do so. The point is simply that it's not enough, there's another kind of work, whole different levels of thinking that needs to be done.

And the fourth root that brings people to pretty much the same place is the performance management route - the search for a results orientation and driven very explicitly in the federal context by GPRA, and in many of your states by performance-based budget statutes where you are being required now to give an account of your performance in terms of results achieved, that is outcomes, impacts, effectiveness rather than efficiency, productivity or outputs. And as you search to give that account, of course it would be nice if the performance account was simply a logical description of your performance. And when your performance was mostly about functional productivity and enforcement outputs, then of course it was easy to give an account that mirrored that performance. And when the demand changes for performance accounts, all of a sudden it opens up this big vacuum. What is the performance that would actually produce such a performance account as a natural outwork?. We could spend three days talking about that, and we're not going to touch it at all this morning.

Let's look particularly at the innovations root. Understanding innovations and innovativeness. Now here's a very curious chart that is only a week old. It actually arose out of the last one week program we run - an executive program - on management of regulatory and enforcement agencies at the Kennedy school. And the last running of this, we had a discussion on this diagram. It's a little simplistic but it may be helpful to help us understand where are the innovations that we're witnessing.



We academics. We love these 2 by 2 charts. There's almost nothing important that can't be represented in a 2 by 2 chart. And as you know, it's always the empty cell that's the interesting one. At the moment they are all empty. We're going to fill up some of them. (*NOTE: The figure above has been completed so the reader can reference when reading through these remarks.*) The line across the middle is simply the split between inside the agency and outside the agency, and the line down the middle splits what is actually a continuum – the distinction between aggregate macro prescription and detailed micro-level behavior.

Now why do we create regulatory agencies? Answer: because there's some nasty object out there. There's a set of risk beyond control, harms, problems, call them what you will. In 1970 we recognized in perhaps a new way, a whole set of avoidable environmental risks as we recognized a whole set of occupational hazards. And hence, the creation of two new agencies.

Now to be on safe ground, I know that you prefer to talk about somebody else's business. So I'll focus on OSHA. What do we do when we see a whole new category of risks? Answer: we prescribe – usually the legislature at the outset prescribes - the form of agency activity that will seek to control this risk. And what this means is that we develop some general theory about what the agency ought to do in order to deal with this.

And in the case of OSHA it was very clear to OSHA from their inception what their job was. The model was: inspections of the work place, usually unannounced, followed by rigorous enforcement, the issuance of citations, and other actions, where necessary, whenever they found a violation. That was the general theory, and if that's the general theory, it prescribes aggregate level agency action.

So now what is the job of management? The job of management is to break down that aggregate agency prescription into little pieces, which we call productions and operations management. This is the business of designing schedules, producing rosters, distributing pieces of the workload across geography and between different functions. An important word is administration - the Latin *ad minis* means towards pieces, breaking up the prescribed macro level conduct into tiny, tiny components.

And what we've done, of course, is we've created a path that runs from the bottom right hand corner, the aggregate risk, to the top left hand corner, what we call the detail prescriptions for action. You may ask, "Well why do we have to get to the top left hand corner?" Answer: So that you and all of your staff know what to do tomorrow. You have to get there somehow. The interesting question is by what route? How might we go there.

Now this is perhaps a little naive. There's a huge range of environmental problems, and we have many different approaches. And by the way, in the last ten years we've explored new approaches at an unprecedented pace. And maybe the general theories (for environmental protection) are several rather than one, and maybe they do change over time. But you just have to be aware that these general theories carry enormous power. There are various times when you can see these general theories. They fight with one another.

One of the most common situations is when you merge two different agencies. And when I started working with the Florida Department of Environmental Protection (DEP), they were coming off a merger between the Department of Natural Resources and the Environmental Regulatory and Enforcement Division. And for a long while, the two separate cultures of those two separate agencies had to coexist under one new umbrella. This was not comfortable. One general theory was about stewardship, about partnership with the community. The other general theory was about the importance of enforcement and regulation. Some of you preside over merged agencies and may be aware of the competing or conflicting general theories operating in different parts of your organization.

Another time that you see general theories competing for supremacy is when agencies fight between themselves for resources and attention. Again I won't talk about the environmental profession because I want to get out of here alive. Law enforcement - have you ever watched the Drug Enforcement Agency (DEA) fighting with the FBI (Federal Bureau of Investigation). The DEA's general theory is move in quickly on the basis of information received, and make arrests and seizures. So their performance report is principally centered around the number of arrests and the magnitude of the seizures.

The FBI looks at the DEA and calls them the street-smart door-kickers, regards them as the blue-collar version of law enforcement, and that they, the much more sophisticated, very proud Federal Bureau of Investigation, they operate a superior general theory. They say what we do is close down entire operations. That's the model that's beaten into them in training and seems to live with them all through their FBI careers.

Now what that means in practice is that when an intelligence snippet is received, they develop it. And instead of moving in quickly and giving the game away, they develop evidence, they put in undercover agents, they develop informants and turn them, they get court-ordered wire taps and do surveillance on the organization for twelve months or eighteen months, typically just short of two years. And then when they've learned all they think they need to know, they move in and take out the entire shebang. One more criminal organization gone.

Now when I talk to the FBI, I say "Well that's a very interesting general theory. Now let's figure out whether it's actually superior to the DEA or to anybody else's." When would this be good, this theory? This theory would be good if you happened to be dealing with a crime problem that was dominated by a few large criminal organizations, where the problem was actually vulnerable to you taking out criminal organizations, one-by-one. And bear in mind you can only do three. It's very resource intensive. But if you were dealing with a crime problem that is characterized by loose and diffuse networks that shift constantly or by hundreds of small criminal organizations - it's true of money laundering, it's true of staged auto rings, insurance scandal, all kinds of crime problems - then this doesn't represent an efficient method for getting at that problem. The taking out of specific organizations, that is not a vulnerability, that is not enough, that is not a pivot point for that kind of problem. You would have to think of something more efficient and effective.

I don't know what the general theories are that live on in your agencies or in specific divisions. But let's just take a look and see where the specific innovations are. Against this backdrop, in writing "The Regulatory Craft," which was just out this spring, one of the background studies that I did was to look at all the Ford Foundation winners (for Innovations in American Government) that we had up to that time, up to 1998. This is thirteen years, and I picked out from those many finalists all of those that came from regulatory or enforcement agencies. Or even if they didn't, were somehow regulatory or enforcement-oriented. Because most agencies have this function within them someplace.

And I'm going to show you three broad categories of these innovations. Almost all of them fell into one or other of the three categories. And the first category is perhaps the most predictable and straightforward given the language of process improvement and customer service. And it includes the IRS Telefile program, the FDA's reform of the drug approval process, the city of Chicago's parking enforcement program. You could argue that in each of these cases, the general theory didn't change. What happened is that the processes were streamlined or even they shifted from one medium to another, but basically the operations of the agency were the same. They were improved, they were speeded up, they were made more modern, perhaps technology was invested to reduce error rates, displace people, make the whole thing more efficient. But not much has changed in the actual strategy or approach of the agency. Good things, but just one category.

The second category gets to be significantly larger. Eight within this time frame, and all of these fit the general description of specific risks, problems or patterns that have been identified and then solved. The list includes San Francisco's First Offender Prostitution program. Now what that was organized around is a study of the dynamics that not only attracted girls to the prostitution business, but then the cycle that kept them there. And then through study of these cycles and dynamics, the innovators in this case decided there was an intervention opportunity if we could catch these girls after the first time that it came to light. And that somehow, we could get them out of that cycle.

The Boston Police Department's Operation Cease Fire focused on juvenile homicide in Boston - extraordinarily successful. By the way, if you think that problem-solving is somehow soft, here's the antidote to that notion. It was thoroughly enforcement-centered - rigorous use of enforcement, draconian use of enforcement. But within a carefully articulated, results-oriented, highly analytical framework.

And we could run through all of those. OSHA's Maine 200 program - a specific risk concentration was identified. More than 50 percent of the State days lost to injury, work days lost to injury, was accounted for by only 200 companies. What does this represent? Well it's an analytic insight that enables you see "Well, if we could just get hold of those 200 companies and do something, then we could have a very profound effect on the statewide injury rate."

Some of you, Minnesota, appears on this list together with many others.

Now go back to our diagram for a moment. Think where are these going to belong? These are specific risks or problems identified and solved. Pause for a moment. Where do they belong? The empty cell, right. They're all down there in the bottom, left-hand corner. They are not the whole set of environmental risks. There are a specific identified piece, identified and then addressed. In other words, what we see - and here you'll see the limits of my graphic imagination, these are simply the shapes that are available in Power Point . I tried to pick as different ones as I could. What we see is that you know sometimes as you chop up the risk they come out in different shapes and sizes. And, in fact, part of the art here is to be able to slice and dice the world in so many different ways, looking for a concentration or a clump or cluster that really counts and that tells you how to proceed.

And in the environmental field, some of these might be media specific problems, some of them might be a drinking water problem, some of them might be peculiar to an ecosystem or watershed, some of them might be about a specific industry - the citrus industry and the pesticide that they use. Some of them will be about products on the supermarket shelf or individual use of barbecues in the backyard. Who knows? All different shapes and sizes. But what you see with this list of innovations I've just shown you is increased attention to carefully delineating the pieces of the risk, to picking an important component so that you can take a bite, and a significant bite out of a larger problem.

And once you found them, what do you do? You design tailor-made interventions with the emphasis on effect or impact,. In other words our job here is not to produce lots of activity in the agency. Our job is to eliminate or mitigate this carefully-identified risk. And all of those eight innovation finalists fit very specifically here. They are tailored made solutions to carefully-identified problems.

Before I move on to the third category, it's interesting when you spot that. For me you're looking back on a book called "Imposing Duties" which was published in 1994. Very few of you read it. The good news is that you no longer need to - it's totally supplanted by "The Regulatory Craft." Actually I heard last week, a copy of "Imposing Duties" was discovered by the EPA in Alaska. So it is still making the rounds. But there's this very succinct summary paragraph just on the back cover. I mean if you do get it, just read the back cover. Because it tells you what this book is about. It says "In this book, Sparrow draws out remarkable parallels in the way these professions..." By the way, at the time I had only dealt with police, fireman, and tax. Since then, I've dealt with many more. But at the time, it was just those three. Again, it said "Sparrow draws out remarkable parallels in the way these professions are adapting to meet their current challenges as they reject traditional reliance on retrospective, case-by-case, after-the-fact enforcement. Rather than perpetuating their dependence on processes and procedures and courage" - and here's the important piece - "these professions are developing new capacities for analyzing important patterns of noncompliance, prioritizing them, and designing intelligent interventions using a much broader range of tools."

This is an extremely accurate and insightful summary of what that book was about. I know, because I wrote it. They asked me to write this in the third person for the back cover, which I

was happy to do. Actually the nicest thing about this particular request is they asked me to write this two or three months after the book had been finished and edited, six months after I had finished writing it. And it's curious that it's only then long after-the-fact that you really figure out what the book was all about. And this is what it's about. And since then, as many of you know - those of you that I've worked with - this is rather a long sentence and we have had for the sake of easy memorization to shorten it. And let me show you the shorter version. "Pick important problems, fix them."

This is the shorter version which some of you have emblazoned on your desks. This actually started life as the OSHA survival strategy. They were under attack - like you - by the freshman Republican Congress. As Congress drafted bills designed to eliminate OSHA, we in the OSHA redesign team saw OSHA struggle to prove its worth.

There was one telling defense by the *Washington Post* of OSHA, almost the only favorable article. And the *Washington Post* said "Hold on a minute. Before we scrap OSHA, let's figure out what OSHA has accomplished." And they gave a list of accomplishments. One of them was they had basically eliminated brown lung disease since they started paying attention to that. Another is that they had cut by over 80 percent the deaths that occurred in grain handling. I don't know if you know what those are, but this is people drowning in grain silos. And so in seven years, the number came down from this to this. And every example they gave, the *Washington Post* in OSHA's defense, was a risk identified and mitigated or eliminated. And so in trying to communicate this throughout the organization, this is called the OSHA survival strategy. There's actually a little more to it - it said, "Pick important problems, fix them and then tell everybody."

That's actually quite significant, that last piece - then tell everybody. What that means is once you've figured out the risk control performance, you'd better figure out the way the risk control performance counts. That really is the value that you're going to hold out.

Another very interesting category, a third category of innovation finalist, is not just specific problems identified and solved, but systems for identifying and solving problems, not just once but over and over again. And there are even more of these, twelve. I counted. For example, Florida DEP's ecosystem management, is particularly good at being able to spot and characterize and deal with a particular class of environmental problems, those that are ecosystem-shaped.

Illinois' Criminal Justice Authority Spatial and Temporal Analysis of Crime project. This is basically a hot spot map, clustering map like the maps on the old precinct office walls, clusters of pins for murders and homicides, and another cluster for assaults, another for domestic break-ins, another for rapes. And then you look for the patterns, and now you know how to respond. And all of this had turned computerized and automated and was taken right out of the crime files to reveal some important truth to police managers. In other words to identify for them significant problems that require their attention. When you look at these, you also see the very early emergence of problem-oriented policing, a model quite carefully developed by Professor Herman Goldstein for the police profession. He spent his life trying to teach the police profession how to do this systematically.

Where would these belong on that chart? Back to the chart. These are not specific problems solved. These are systems for spotting them - that's where the action is with this category. Unusual, innovative methods for understanding the aggregate risks, breaking them down into manageable pieces. And of course, this takes a fair amount of discipline because you'll notice this arrow across the bottom doesn't even come inside the agency. What you're doing is looking at the risks in their natural shapes, in their natural dimensions, understanding their pieces and components and cycles and structures. Figuring out what is the best opportunity to intervene and deflate the entire thing. And that requires for a moment that you put out of your mind everything that you do and everything that you have - the operational capacities that you have, the processes that you operate. You focus on the risk. This is simply a task orientation. Focus on the external world and pick that apart before you figure out what you're going to do.

And so we see one way of viewing it is that a lot of the innovative activity is along this alternate route to the detailed, micro level agency prescription. And many times, as you know, the specific innovations that come out of this route appear in the organization to be a slap in the face to the general theory. They go against the grain. Often there are forces within the agency that will try to suppress them or kill them, trying to preserve their perception of the right way to proceed.

As you observe and go from room to room and listen to innovations of different kinds, some of you will be affected by your own miserable experiences - the pressures, political pressures for reform.

And what I want to do is show you the dichotomy that has been much discussed during the 1990s. I hope that it is going to be much less discussed in the next decade because actually I believe this is a false dichotomy. But the way that the argument is often framed is that "Well regulators are out-of-control, they are harsh, enforcement-oriented, adversarial, simply responding to violations after the fact" and that became politically unacceptable. And that therefore a new style had to be produced. Call it a strategic innovation, if you like. That's how many people saw it.

And the new model is, of course, the exact antidote to all that is on the left-hand column. It is "No, we turn our back on enforcement, or de-emphasize enforcement. In fact better not to speak of it. Instead we'll emphasize compliance assistance, customer service facilitation of voluntary compliance. We'll use partnerships rather than being adversarial. We'll be preventative." Of course, for many this is an ideological preference. We'd much rather intervene early before the harm is done. And, of course, if problem-solving appears at all, it appears over on the right-hand side, over there with the soft stuff.

Now I don't know whether this is part of your internal debate or has been. If it has been, I'm sure you've moved beyond it now. Because we discover this to be not very helpful. But there may just be a few folk in the audience left who feel an allegiance either to the left hand side or the right hand side. And that therefore you could - if you allowed yourself to be so driven - select which innovations you are prepared to go and listen to. And if you're on the left hand side you'll

be sitting in the enforcement and compliance innovations strand, whereas if you believe “Well if we just did a good enough job of prevention, we probably wouldn’t even need enforcement,” you’ll probably go to those that seem partnership-oriented and collaborative.

Why do I want to unravel that dichotomy? Because it’s done such damage. The effects when the choice is presented that way produces a schism within the organization. Camps develop. There are two competing general theories. The folk on the left say of the people on the right “You fools, naive about human nature, you imagine that all these people just want to comply and that all you have to do is help them? You don’t understand. I deal all day long, and I have for 20 years with the hard bastards. They don’t understand anything other than the threat of incarceration, personal liability for corporate executives.”

And the folk on the right who are younger, newer, in the agency, politically well-connected, more female, social service backgrounds, liberal arts, say of those on the left, “You dinosaurs, you remnants of a bygone era, irrelevant if we do our job right.” And you know the enforcement agents normally lose, at least for a while - disenfranchised, demoralized. They thought they heard - even though no one actually said it - they thought they heard the message “Enforcement doesn’t count anymore. We don’t appreciate it.” They feel unappreciated. They feel like the agency - in all of its language as it pursues voluntary compliance and partnerships with industry - is, in fact, gone soft, caved in to political pressure and lost its ability to take enforcement where necessary. And because they think they hear that - even though nobody actually said it - you see at some stage a precipitous drop in enforcement numbers.

Now this phenomena is now so common and so familiar that its even got a name in the environmental community. It’s called the bean dip bunker. For the bean counters, the beans suddenly dip. Why the bunker? Well this is because all federal senior managers play golf, and you know, you thought you were steering a balanced course right down the fairway, not lurching either too far toward regulatory capture, not lurching too far toward aggressive adversarial regulatory action. You thought this was a balanced compliance strategy you were pursuing and unbeknownst to you - just over the horizon- because of the language you’ve been using - is this bean dip phenomena.

It happened to the EPA in 1995. More than 50 percent reduction in judicial referrals. It happened to OSHA in 1995, again because of the reaction to Republican pressures. It happened you may have noticed to the IRS in 1999, only last year as a result of their last reorganization, totally driven by the customer service motto. And by the way a new disciplinary code for IRS employees - ten things that you must do to not upset taxpayers. And if you do you may lose your job. Well now all IRS employees know the one thing that really upsets taxpayers is enforcement action - a 98 percent reduction in some categories of enforcement actions - seizures, liens on property, so on. As if the staff had been told not to do it. They hadn’t been told not to do it; they’d been told to be reasonable. They heard “Don’t do it.” They realized it’s too dangerous, too much grief, too much visibility and vulnerability. And of course as soon as that happened, it only takes two seconds - or in the IRS case two weeks - to notice the bean dip. And Congress then is holding hearings not about IRS unreasonableness, but about IRS inactivity. And they ask the

executives of the agency “So what are you doing? Why are your numbers falling to pieces? After all this was the only story you ever told us and now this story doesn’t look so good.” And the executives say, as so many of you have said in the press because I’ve read it “Oh but we’re developing innovative strategies that reach further and have greater impact”, and which by the way are less onerous, cause less grief.

And for a moment then, somebody in the organization, one of those dinosaurs is suddenly re-empowered. And they run around the organization, beating the table saying “There I told you so. Get the numbers back up. We have to maintain a credible deterrent. We should have been doing that all alone. All this newfangled nonsense.”

I don’t know if you know these people. They have names. You know who they are. They have a point. Why? Because the outside world has a point. They said “This was the only story you were telling us and according to this story, this performance story doesn’t look good..” What is missing here? The answer: any more sophisticated performance story that would prove your point that you really are being more effective. That the reason the enforcement numbers have gone down is because, in fact, the world has become a better place.

In the absence of such a story, the organization descends into this kind of schizophrenia. And the field level staff when they walk in in the morning, they don’t know who they’re going to meet in the corridor. It might be the guy who says “Get the numbers back up.” Almost sets quotas, but not quite. Or they might meet one of the champions of one of the innovative programs. This is not a happy place to live. And it means, therefore, that you have to unravel the dichotomy and understand exactly what is the innovation and what kind of innovation is it.

At the Kennedy school, we teach students about four types of innovation and it’s worth just plugging them into the back of your mind

- Strategic innovations that is some whole new idea about missions, values, and goals. A different statement about what the organization is about.
- Program innovation is where you invent some new program. The equivalent in commerce would be when you invent some new product line.
- Administrative innovation is when you change some internal system. For the police - different rosters and schedules 4 x 10 rather than 5 by 8, two person cars rather than one, different allocations of staff, changes in the financial systems and budgeting system and the information systems.
- Field level innovations this category is when you have a front line engineer confronting directly a problem and they just invent a solution because the need for one is obvious to them.

And it’s important when you go back to the hard versus the soft to say “Well is that in fact the

strategic innovation? If there's a new idea about what our organization is supposed to pursue, is it that we've simply switched from hard to soft?" I don't think that's it. I think instead the real strategic innovation is the emergence of the central focus on harm reduction, problem-solving, compliance management, risk control. Call it whatever you like. And that many of the other things ...(End of tape; Few moments are missing as new tape was installed).

...So it's obvious, isn't it? It depends what you're working on. It depends upon your ability to differentiate between segments of the audience. That some genuinely will comply and just need to be told how. And others will do everything in their power to subvert your purposes, and they need to be nailed to the wall.

Regulatory style: should we be hard or soft? Answer: In the essence of craftsmanship, we should be able to deliver many acts, not just one. It produces some interesting organizational difficulties. Does that mean we should require our staff to produce chameleon-like versatility, so on Monday morning they can be vicious bulldogs let out of the enforcement pen, and on Tuesday, they are diplomatic conciliators negotiating some fabulous consensus when no one thought it was possible. And as you know, requiring that kind of versatility from individuals produces all kinds of stresses on them. That's well-established in research.

The good news is that you can actually produce agency versatility without so much agent versatility. That's to do with how management manages - different staff, different skills, and how you manage to mobilize them all around common problems.

And the one of these that's come to interest me most in the last couple years, the best time for intervention, you know, I thought for many years that prevention was better than reaction. That this was an ideological or doctrinal preference. It's taken me a long time to realize that this too is a tactical or risk-specific choice. .

And I learned this most powerfully from the disease control field, public health. When you look at disease control, you know some diseases we have actually managed the very best form of prevention, which is to eradicate them. Small pox was declared eradicated in 1970, I think, or thereabouts. By eradicated they mean two years of no identified incidents anywhere in the world. Small pox now exists as far as we know, in laboratories. But we haven't managed to apply that same degree of prevention to the common cold or to cancer. Their attitude to the common cold is let it happen and worry about it only when it turns into something more serious, like bronchitis or pneumonia.

Why is it that we would apply a prevention doctrine in the case of small pox and not to the common cold? Answer: Because of the properties of the disease. There are peculiar characteristics of small pox that made it susceptible to prevention. They include that there was a cheaply available vaccine, that could survive both hot and cold temperatures, and produce very few harmful side effects. Also, that small pox shows itself very rapidly after transmission, and so you can actually identify and contain outbreaks. And the same properties do not apply to the common cold or to cancer. And their attitude toward cancer, while we still seek for prevention, is

instead to focus on a different chronology of the unfolding of this harm. That is we focus on early detection and screening so that we can mitigate the harm before it's too late.

Now when you think about different problems, you can choose many chronologies of the harm. For instance, imagine that it was your job to stop people from dying in nursing homes that burnt down. So, pretty simple job. Control mortality rates in nursing home fires. Well now you think about the unfolding of the harm in that case. You could focus right at the preventative end, and if you did, that would mean stopping the nursing home residents from having any pyrotechnic materials - no matches, no cigarettes, no smoking in bed, search them when they come in, utter surveillance, perhaps intrusion into their individual liberties. And you might decide for whatever reason that wasn't the place you wanted to go. And you could move back a bit. How about we focus on not allowing any fire to remain undetected for more than two minutes. Now all of a sudden, a whole different category of innovations. A whole different category of technologies become relevant. Now you're in the business of smoke detectors, fire alarms systems, sprinkler systems, and rapid response.

So you can choose, and we do choose, frequently. And rather than this being a doctrinal or ideological question, this is tactical. It's about understanding the vulnerabilities of the risk, it's about picking the best time to intervene, a resource-efficient time to intervene. And of course everything else being equal, we'd like that to be as soon as possible so the harm is actually minimized. This strategic innovation - this refocusing on risk-control or environmental problem-solving or whatever language we use - and notice that the language is not well-established - this now is attracting agencies from all over the place.

I didn't know there was something called the Office of Pipeline Safety in Washington. They apparently regulate the safety of oil and gas pipeline that traverse U.S. soil. And they were using risk-management as their basic operational framework. Risk management is much more than the technical models used to calculate probabilities and consequences. To be useful as an alternative regulatory approach - just pause for a moment - to be useful as an alternative regulatory approach - it just sounds like a strategic innovation - risk management must be an integrated program of activities institutionalized.

I don't know whether you love that word or hate it. If you're one of the bottoms-up people who believe innovation is all about freedom and empowerment and absolutely no managerial structures, then the word institutionalized looks extremely threatening. And when I talk to my faculty colleagues at the Kennedy School about this, and I talk about system structures and the need for rigid protocols and methods, institutional systems, they say "Why on earth would you want to load all of that on the back of what we thought was freedom let loose?" And my answer is "Well, I come to that position reluctantly."

And there are people in the audience here who share with me this miserable experience, that you can teach everybody this risk control stuff is different, that it's important, and that we'd like to do it, and then you sit and wait for it to happen. And for a long list of reasons that we could explore and as some of you know, it does not happen. One of the things that we've discovered is that this

needs to be managed. There needs to be structure, there needs to be recording systems, there needs to be rewarding systems, there needs to be resource allocation systems and analytic support. And that if more than one or two of those is missing, then really the chance of that happening are about zero.

By the way, interesting that this Office of Pipeline Safety, they also intended to use risk management as an alternative basis for operations and for relationships with the regulated community. So not only a theory of work for them, but a basis of interaction with the regulated community.

I won't bother you much with the U.S. Coast Guard, except to say that for those of you that are still bothered with "Do I want to put more resources into enforcement? Or "Do I want to put more resources into partnership?" Notice, what the Coast Guard says about those kinds of arguments. They have those kinds of arguments with the regulated audience in their community, which is the maritime industry. And they say "In our experience, conflicts arise over activities, such as the scope and frequency of inspections or corrective actions." In other words, if we're going to argue whether we do an educational campaign or an enforcement campaign, we know which one they'll like. But if we can agree first on outcomes - that is risk reduction objectives - that is in that big diagram, the specific little stars in the bottom left hand corner, specific hot spots where people are dying. If we can agree first on the nature and scope of those problems, and what we'd like to see happen, then all of a sudden, our conversation about how to proceed is smoothed substantially.

"The Regulatory Craft" has been out for about six months, and it doesn't say much about financial regulation, but the interest around the world in that book is mostly coming from financial regulators, in Australia, in Hong Kong, South Africa, Singapore, because they are worried about repeats of the Asian crisis and because they are trying to understand systemic risk in the financial system. Also doing consumer protection, all of that fits in the same model, even though I have not discussed it much in the book. And the Australian Securities and Investment Commission, this is their equivalent to the SEC, said "The challenge we face is to ensure problem-solving." But notice, they want to give it a complicated name, quite interesting. Their preferred terminology is "an integrated, risk-based approach to enforcement." Why do they want to give it a complicated name? Because otherwise, everyone thinks it's easy. And doesn't understand that it's different. And they say, "Our challenge is to make sure this becomes the organizational framework, and not just an add-on activity." You could say the same about innovation, which plays a role in this. We'd like that to become an organizational framework, not just an add-on, serendipitous activity. It is a much more difficult task to seek to adopt this as an overall organization approach.

I think I have time to show you my favorite tool. Don't know whether you can see it, there's a little handle here that you hold in one hand. This is all made of cast iron or steel, or something. And then this is a handle that winds. And when it winds, the little pin is pressed through and through. Does anybody know what this is? It's to remove the rivet on a bicycle chain. I love this tool!

When I was twelve, I worked for six weeks polishing cars all day to earn enough money to buy my first bicycle. And I loved that bicycle. I took care of it, I knew every piece of it, how many ball

bearings and everything. I learned how to take care of it, and there came a day when I wanted to repaint it. And I discovered this horrible topological reality that you may have encountered if you're a cyclist, it's that that wretched chain is actually looped through the bicycle frame! And you're trying to figure out, Did they make the bicycle with the chain already on it? Or did they make the chain with the bicycle already on it? And how on earth can I paint this thing with the spray paint without getting the chain in the way. Horrible, greasy thing that it is? And that's just one problem, when a chain link remover turns out to be invaluable. And it's a wonderful thing because what you do is, you lay the chain over these two little pillars here that hold it steady. And then you wind through the rivet and you push that little steel rivet out the other side. And if you're smart, you don't push it all the way out. You know exactly how many turns so that it's left just sticking out one side, but the chain comes apart. Why do you not want to push it all the way out? Because if you do, it's devilishly difficult to get it back in again, straightly fit, real tight. So you like to leave it just hanging out. And by the way you'll notice there are two different racks here where you can put the chain. The reason for that is because when you're winding the rivet back in again, after you're done, after you've lengthened it or shortened it, or sorted out the kinks, or repaired it or whatever you're going to do, if you wind it all the way to the standard setting, you will be left with what's called a tight link. Because it's all compressed, squashed together. And that link won't bend, and therefore, your chain will skip as it goes over your derailleur gears. And so what you do is you wait until the very last quarter turn, and you put it on the other pair of pins, and you do the last quarter turn with the back side of it unsupported so that it actually pushes the mechanism apart which makes it loose and free to hinge.

Now I don't know how many people in the room have actually got one of these, or have actually seen one of these before, but when I first got this thing, I was fascinated with it. And I was very proud of the fact that I knew how to use it, I became an expert with a chain length remover.

By the way, I didn't set myself a quota, this is how many links I should remove. I didn't allocate budget time - I want to spend at least 49 hours per year working with a chain length remover. I just put it in my tool box, eventually. I was very happy actually earlier this summer - for having not used this thing for about twenty years - one of my daughter's soccer coaches, his son had a bicycle that didn't seem to working quite right. And I took a look at it, and it was fascinating, he said, "You know, the chain keeps hopping." And I'm thinking "I know about chains. I wonder if they've changed." I looked at it, and he's got the classic derailleur gear mechanism, and he's got those two wheels below the derailleur on the back wheel that are supposed to be tensioning on, that holds the chain stretched. And it appeared to me that the chain was actually threaded the wrong way between these two wheels. And that therefore they were all collapsed and squished up and the chain was loose. Probably the right length, just threaded wrong. And as a mathematician, I puzzled for a long while about how on earth I could get this threaded the other way without removing it. Whether that was possible. That was a rather intriguing intellectual exercise, which I shared with nobody. And eventually I concluded and was almost prepared to write a paper on it, why it was not possible to get this thing through; in other words, they must have threaded it wrong at the factory. Thank heavens - an opportunity to use my chain length remover. And so I set to work, and I think, "So do I still remember how to do this?" And I wind away and out comes the pin and I re-thread the chain, and I wind the pin back in, and the last quarter turn, and I do it exactly the way I loved to

use this. And the bicycle worked like a dream. You know, and I tried to tell that story to the soccer coach. He wasn't very interested. He was kind of grateful that I had done something to the kid's bike. He didn't really know what. And the child himself seemed quite happy. You know the problem was fixed, and I was just thrilled to have used my favorite tool.

Well, I've shown you mine. Now as regulators, you show me yours. But don't imagine that that's really the end of the story, or what counts. Let's lay out the challenge.

What is regulatory craftsmanship? Well it's having a whole bunch of different tools. You know I would be foolish if I confused these two. This one is a little piece of aluminum, and it has a kink in it, a notch. The cyclists among you will know - you can tell my toolkit is still heavily bicycle-oriented - this is a tire lever. For when you have a flat tire, and you want to lever the tire off. And the little notch is so you can hook it on the spoke and it doesn't flip back in place while you use the next tire lever. You normally have a set of three of these. And to try and do this job with that tool would be utterly foolish. Trying to do this job with that tool - I'd probably injure myself.

The essence of craftsmanship is having them all, knowing how to use them, and being quite judicious when you will use each one. The issue for regulatory agencies is to construct a framework, so that all of these innovative methods come forward at the right time, in the right place, for the right job. And that there is no internal preference that Project XL is good or is bad. It depends on where and when.

So I think as you go around and study all of these new techniques over the next couple days, let's make sure we understand the challenge for the next five years as the regulatory craft develops. Let's shift the focus from particular innovations to innovativeness. Managing innovativeness. Let's shift the focus from replicating - the danger is that we just replicate solutions to particular problems. Think of that third category of innovations that we saw twelve of already. Rather than that (replicating), focus on systems for identifying and solving problems. And you will, if you're careful, pick out from amongst the array in the program, some of these, which are a different level than solutions to particular problems.

Instead of focusing on particular tools and methods, which of course we have to do, let's define a new regulatory craftsmanship. Instead of being satisfied with managerial tolerance when innovations bubble up from below, let's learn to manage the process of innovation. So that instead of innovations being heroic acts of subversion, what Al Gore calls "the acts of good people, locked in bad systems," instead we will develop frameworks for innovation constructed around important strategic objectives. And if we get that job done, this will be the first meeting, there will be second, third, I can imagine this kind of progress and development can keep all of us fully occupied for several years.

I am delighted to be with you at this start of the journey.

Thank you very much!